DUNDEE LAKE CORING PROGRAM NARRATIVE

The following information summarizes the field activities, collected samples, and requested analyses for the Lower Passaic River Restoration Project Dundee Lake Coring Program. This sediment coring program is referenced in Section 4.0 of Field Sampling Plan (FSP) Volume 1 (Malcolm Pirnie, Inc., January 2006), which describes the collection of high resolution sediment cores in the Upper Passaic River.

SUMMARY OF DUNDEE LAKE CORING PROCESS

To meet the data needs and objectives described in FSP Volume 1, the following steps were implemented to conduct the Dundee Lake Coring Program:

- Evaluated target locations for high resolution cores in the Upper Passaic River using bathymetry, historical satellite photographs showing shoreline development, literature references, and field reconnaissance. These target locations were selected because they were located in potential silt deposits in net depositional areas.
- Conducted a field reconnaissance with probing to further investigate target locations.
- Collected a geological boring and a co-located high resolution sediment core for chemical processing at each location (total of 9 pairs).
- Examined the geological sequence in the nine geological borings at the processing facility by splitting the geological boring horizontally. Based on the sediment type, four target locations were identified that contained silt deposits.
- At the four selected locations, processed the co-located high resolution sediment core vertically into 2-centimeter and 4-centimeter intervals, yielding approximately 20 samples per core.
- As radiological results were received for these four selected location, three cores were eliminated from consideration because they were not located in a net depositional area. The chemical analyses for these three cores were halted. On the one remaining core, which was beryllium-7 bearing, chemical analyses were completed.
- Remaining sediment material was disposed in April 2007.

Field work was conducted in accordance with the Lower Passaic River Restoration Project Quality Assurance Project Plan (Malcolm Pirnie, Inc., August 2005), accompanying addendums, and the January 3, 2007 field modification form. Note that this field modification form anticipated the processing of three relatively long sediment cores, yielding a total of 90 sediment samples; however, only short sediment cores were recovered. Consequently, a fourth sediment core was processed to fulfill the data quality objectives of the program.

DETAILS OF THE DUNDEE LAKE CORING PROGRAM

As part of the 2007 United States Environmental Protection Agency (USEPA) Remedial Investigation (RI) sampling program, Malcolm Pirnie, Inc. collected sediment cores from nine locations in the Upper Passaic River between the Dundee Dam and the Interstate Route 80 Bridge. Locations were identified based on bathymetric data, historical satellite photographs showing shoreline development, literature references, and field reconnaissance conducted on December 14, 2006. These data resources were used to select coring locations with potentially undisturbed silt deposits in net depositional areas.

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Coring activities were conducted on January 11, 2007. At each of the nine targeted locations, an 8-foot long copper probing rod was used by a field geologist to investigate sediment texture. Once the probing identified a potential silt deposit, two co-located sediment cores were collected (a 2-inch inner diameter geological boring and a 3-inch inner diameter high resolution core) using a piston coring device. The piston core was advanced until refusal, or the 8-foot core top approached within 1 foot to six inches of the piston, or the top of the coring tube was driven below the water surface.

Sediment cores were stored overnight at the processing facility in a vertical position in the walk-in refrigerator (4 ±2 degrees Celsius). Table 1 provides the physical conditions of the geological borings collected at each location.

Table 1: Physical Conditions of Geological Borings Collected

Field Location Identification	Boring Weight With Cap (pounds)	Sediment Length (Centimeters)	Whole Barrel Length (Centimeters)	Height of Water in the Barrel Above the Sediment Core (Centimeters) [c]
Location 1	7.99	86	128	7
Location 2	4.82	65	70	0
Location 3	4.34	51.8	90	12
Location 4	4.47	58	64	4
Location 5 [a]	6.69	56	143	Not recorded
Location 6	7.76	93.5	106	0
Location 7	10.35	39	45	0
Location 8 [b]	NA	NA	NA	NA
Location 9	6.26	66	158	2

NA = Not applicable

a: 14 centimeters of sediment material separated from the bottom of the core, forming a 62-centimeter void that filled with water.

b: No sediment was collected from Location 8 due to the presence of sands.

c: Water was removed from geological boring before the barrel was weighed.

On January 12, 2007, the geological borings were split horizontally to examine the sediment strata and to identify four select cores, which likely represent net depositional environments. (The co-located high resolution sediment cores from these four selected locations would then be processed for chemical and radiological parameters.) Photographs of the geological borings are attached for reference, and supplemental geological descriptions are provided in Table 2.[1] Three grain size samples were collected from each geological boring to verify the observed geologic descriptions. Grain size samples were shipped to Severn Trent Laboratories (STL) for grain size analysis following ASTM D422 method.

[1] No photographs were taken of the geological boring at field location 7.

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Table 2: Dundee Lake Geologic Descriptions

Field Location Identification	Geologic Description (refer to attached photographs)
Location 1	Sandy core with silt in core top. Petroleum product 10 centimeters below sediment-water interface (11 centimeters thick)
Location 2	Silt with trace sands. (Potato chip bag present in core top.) Petroleum product 43 centimeters below sediment-water interface (15 centimeters thick)
Location 3	Mostly silts and organic matter with petroleum product 17 centimeters below sediment-water interface (18 centimeters thick)
Location 4	Mostly silts and organic matter with petroleum product 28 centimeters below sediment-water interface (10 centimeters thick)
Location 5	Mostly silt. No petroleum present. Core bottom separated, creating a void of air and water.
Location 6	Silt with some sand (0-79 centimeters) overlying a brown sand layer. Petroleum product 23 centimeters below sediment-water interface (10 centimeters thick)
Location 7	Silt with sand at core top. Petroleum product 79 centimeters below sediment-water interface (8 centimeters thick)
Location 9	Silty sand with petroleum product 53 centimeters below sediment-water interface (17 centimeters thick)

Based on the geological characteristics and classification, Field Locations 1, 7, and 9 were rejected because of the presence of sand in the core or at the core top. Field Location 5 was marked as a potential back-up core but was not processed. Field Location 5 lacked a noticeable petroleum product layer, which may identify a consistent time horizon among the sediment cores. The remaining four field locations were then selected for sediment processing and re-labeled by the sample management team according to the order that the cores were processed (Table 3). The "A" core was designated the primary core and corresponded to the high resolution sediment core. The "B" core was designated the secondary core and corresponded to the co-located geological boring; this core includes only the three confirmatory grain size samples.

Table 3: Dundee Lake Selected High Resolution Cores

Sample Event in Database	Core Identification in Database	Common Name in Database	Location Identification in the Database	Field Location Identification [b]
2085	5177	DL-1A	G0000028	Location 2
2085	5172	DL-1B	G0000028	Location 2
2086	5178	DL-2A	G0000030	Location 6
2086	5173	DL-2B	G0000030	Location 6
2087	5179	DL-3A	G0000031	Location 4
2087	5174	DL-3B	G0000031	Location 4
2088	5180	DL-4A	G0000032	Location 3
--	--	DL-4B [a]	--	Location 3

a: The geological samples from core DL-4B were not shipped because they were accidentally stored in the freezer.

b: Field location identification names are saved in the "Comments" field of the "Coring" table in the database.

The four high resolution sediment cores were processed vertically into four 2-centimeter intervals at the core top and 4-centimeter intervals for the remaining length of the core.

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Sediment intervals that had an observed petroleum product were noted by sample management and submitted for additional total petroleum hydrocarbon (TPH) analysis.

Sediment material was not homogenized in the field prior to filling the sediment jars; instead each sediment interval was divided into approximate halves, and each "half" was placed into individual sample jars. (The laboratories were instructed to homogenize sample before analysis.) One "half," which represented approximately 40 percent of the sediment sample, was designated for organic analyses and stored in a walk-in freezer (-10 degrees Celsius) in accordance with the Lower Passaic River Restoration Project Quality Assurance Project Plan (Malcolm Pirnie, Inc., August 2005) and accompanying addendums. These frozen samples were subsequently shipped frozen on dry ice to Axys Analytical Services (British Columbia, Canada) on January 16, 2007 and analyzed for polychlorinated dibenzodioxins/furans (PCDD/F), polychlorinated biphenyl (PCB) congeners, polycyclic aromatic hydrocarbon (PAH) compounds, and pesticides.[2] The other "half," which represented the remaining 60 percent of the sample, was designated for inorganic analyses and shipped immediately on wet ice to STL.[3] STL Burlington was instructed to remove sufficient sediment mass for metals analyses (including mercury and titanium). If sufficient sediment mass remained, STL Burlington would then remove additional mass for total organic carbon (TOC) and particle size distribution (following ASTM D4464 method). STL Burlington was then instructed to forward the remaining sediment mass in its original jar to STL Richland for radiochemistry analysis, including cesium-137 for all samples and beryllium-7 for the top slice of the core.

Note that the outer rind layer, which is created during core collection, was only removed from the 4-centimeter interval samples. The rind layer remained on the 2-centimeter interval samples to conserve sediment mass. Twigs and debris were removed prior to filling sample jars. The following observations were noted by the field crew while processing the high resolution sediment cores:

DL-1A (Core ID 5177): Located on eastern river bank and upriver of US Route 46 Bridge. (Weight of core with cap = 16.47 pounds, sediment length = 103 centimeters, and whole barrel length = 113 centimeters.) Field crew observed compression of silts in core during core processing. Plastic debris was observed in Slice 1. Petroleum product was observed in Slice 14 through Slice 18. Wood debris was observed in Slice 1, Slice 11, Slice 22, Slice 24, and Slice 25. Gravel (3/4-inch in diameter) was present in Slice 26. A total of 27 slices were generated for this core.

DL-2A (Core ID 5178): Located on eastern river bank and downriver of the Garden State Parkway Bridge near the Dundee Dam warning sign. (Weight of core with cap = 17.39 pounds and whole barrel length = 120.5 centimeters.) The entire sediment length

[2] Pesticides were analyzed following a Axys Analytical Service method for high resolution gas chromatography / high resolution mass spectrometry (HRCG/HRMS) entitled, "Analytical Procedures for Organochlorine Pesticides by Isotope Dilution HRGC/HRMS", MLA-028 Rev. 02, 03-August 2006.
[3] If petroleum product was observed, the sample to STL was shipped as two sample jars. One jar was designated for metals, total organic carbon, particle distribution, and radiochemistry; and a second jar was designated for total petroleum hydrocarbons.

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was 101.5 centimeters, but a 7.5-centimeter void filled with water and air separated the bottom 8 centimeters of the core.[4] Petroleum product was observed in Slices 8 through 13. Slice 11 and Slice 12 contained 3-inch diameter pieces of asphalt. (These two slices were homogenized in a stainless steel bowl, after the asphalt was removed, prior to filling the sampling jars.) A geological boundary was observed between Slice 21 and Slice 22 with silts transitioning to silty sands and then sands. Slice 25 and Slice 26 were discarded because they were classified as sands. A total of 24 slices were generated for this core.

DL-3A (Core ID 5179): Located on western river bank in backwater between Garden State Parkway Bridge and US Route 46 Bridge, roughly 100 yards upriver of the mouth of the backwater. (Weight of core with cap = 16.57 pounds and whole barrel length = 113 centimeters.) The entire sediment length was 74 centimeters, but a 20.5-centimeter void filled with water and air separated the bottom 9 centimeters of the core. (The bottom 9-centimeters of material that separated from the core bottom was discarded.) Petroleum product was observed in Slice 9 through Slice 16. Wood debris was observed in Slices 1 and 19. A total of 20 slices were generated for this core.

DL-4A (Core ID 5180): Located on western river bank in backwater between the Garden State Parkway Bridge and US Route 46 Bridge, near mouth of the backwater. (Weight of core with cap = 18.60 pounds and whole barrel length = 127 centimeters.) The entire sediment length was 114 centimeters, but a 10-centimeter void filled with water and air separated the bottom 6 centimeters of the core. Root matter was observed in Slice 5, Slice 14, and Slice 15. Petroleum product was observed in Slice 8s through 12. Gravel (1-inch diameter) was observed in Slice 6 and Slice 12. A geological boundary was observed between Slice 26 and Slice 27 with silts transitioning to silty sands and then sands. Slice 28 included the material that separated from the core bottom; only the top 4-centimeters were processed. Note that due to costs only 19 slices from DL-4A could be shipped for chemical and radiological analysis. After Slices 1 through 14 were shipped, every other slice was manually mixed together and shipped as one sample, respectively.

- Slices 16 and 17 were combined to form one sample from 52-60 centimeters depth.
- Slices 18 and 19 were combined to form one sample from 60-68 centimeters depth.
- Slices 20 and 21 were combined to form one sample from 68-76 centimeters depth.
- Slices 22 and 23 were combined to form one sample from 76-84 centimeters depth.
- Slices 24 and 25 were combined to form one sample from 84-92 centimeters depth.

Slices 26 through 28 from DL-4A were discarded because they contained sand. Slice 15 was discarded because it contained mainly root matter. A total of 19 slices were generated for this core.

[4] Voids in the sediment cores were created during core collections or overnight if the core separated. To minimize disturbance to the sediment cores, the field crew did not attempt to remove the voids from the sediment cores if they were observed in the field. Professional judgment was used in the processing facility to determine whether the separated material was processed or discarded.

FURTHER NOTES ON SAMPES AND DATABASE

Table 4 (attached) summarizes the four high resolution sediment cores processed during the Dundee Lake Coring Program and the samples generated for each core. Each sample was originally submitted for PCDD/F, PCB, PAH, Pesticide, metals, cesium-137, grain size, TPH, and TOC. However, based on radiological analyses and geochemical evaluations, only certain analyses were completed before a "stop work" was issued to the laboratory. All metals, grain size, TPH, and TOC analyses were completed, and the data are available on the database.[5]

For the radiological samples, beryllium-7 was only detected in the core top of Core ID = 5177 (common name DL-1A, field location 2), which identified this location as a potential depositional location with recent, fine-grained material in the core top. Cesium-137 analyses continued in this core to the petroleum layer at a depth of 48 centimeters. The three remaining cores, which did not contain detectable quantities of beryllium-7 in the core top, were classified as non-depositional. Cesium-137 was measured in only 6 samples from each of the three cores before the laboratory was instructed to stop work. (Total radiological samples = 30 samples.) For the organic analyses, Axys Analytical Services was instructed to complete the PCDD/F, PCB, PAH, and pesticide analyses for Core ID = 5177 (common name DL-1A, field location 2), which was identified as a depositional environment based on the radiological analysis. Organic analyses were completed on every sample from Slices 1 through 20 (or 0-72 centimeters), and then every other slice to the bottom of the core. For the three remaining cores, which were considered non-depositional, only the top four slices were completed for organic analyses. When the Axys Analytical Services was instructed to stop work, any remaining samples that were already extracted were completed by the laboratory, and the data are available on the database.

The validated radiological data in the database was reported by STL Richland. For many samples, there was an insufficient amount of dry sediment mass to fill the 20-milliliter configuration cup for the instrument, resulting in nondetected cesium-137 concentrations. STL Richland was required to count the samples longer than anticipated to achieve the desired detection limit; however, a "stop work" was issued to the laboratory before the samples were re-analyzed. Meanwhile, to confirm the initial unvalidated results by STL Richland, seven samples were shipped to Rensselaer Polytechnic Institute for confirmatory radiological results. These confirmatory results are unvalidated, and therefore, are not available in the project database. However, they were verified within the Rensselaer Polytechnic Institute laboratory by running multiple reference sediment samples and standard reference materials. Table 5 provides the confirmatory radiological results as reported by Rensselaer Polytechnic Institute.

[5] For duplicate samples, insufficient amount of sediment mass limited a duplicate analysis for metals, grain size, TPH, and TOC analyses.

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Table 5: Confirmatory Radiological Results from Rensselaer Polytechnic Institute

Sample Identification in Database	Core ID	Common Name	Depth (Centimeters)	Beryllium-7 (pCi/kg) and Error (1σ)	Cesium-137 (pCi/kg) and Error (1σ)
LPRP-SCSH-DDL-000018	5177	DL-1A	0-2 cm	540 ±130	130 ±15
LPRP-SCSH-DDL-000018 (Duplicate)	5177	DL-1A	0-2 cm	400 ±180	150 ±15
LPRP-SCSH-DDL-000020	5177	DL-1A	4-6 cm	NA	220 ±23
LPRP-SCSH-DDL-000024	5177	DL-1A	16-20 cm	NA	720 ±42
LPRP-SCSH-DDL-000068	5178	DL-2A	0-2 cm	370 ±170	140 ±14
LPRP-SCSH-DDL-000047	5179	DL-3A	0-2 cm	-120 ±250	280 ±25
LPRP-SCSH-DDL-000094	5180	DL-4A	0-2 cm	0 ±240	350 ±27

NA = not analyzed

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ATTACHED TABLES

Table 4: Summary of Available Data for the Dundee Lake Coring Program

Sample_ID	Core_ID	Common Name	Depth_Top	Depth_Bottom	PCDD/F	GS	RAD	METAL	PAH	PCB	PEST	TPH	TOC
LPRP-SCSH-DDL-000018	5177	DL-1A	0	2	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000019	5177	DL-1A	2	4	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000020	5177	DL-1A	4	6	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000021	5177	DL-1A	6	8	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000022	5177	DL-1A	8	12	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000023	5177	DL-1A	12	16	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000024	5177	DL-1A	16	20	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000025	5177	DL-1A	20	24	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000026	5177	DL-1A	24	28	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000027	5177	DL-1A	28	32	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000028	5177	DL-1A	32	36	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000029	5177	DL-1A	36	40	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000030 (duplicate)	5177	DL-1A	36	40	√				√	√	√		
LPRP-SCSH-DDL-000031	5177	DL-1A	40	44	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000032	5177	DL-1A	44	48	√	√	√	√	√	√	√	√	√
LPRP-SCSH-DDL-000033	5177	DL-1A	48	52	√	√		√	√	√	√	√	√
LPRP-SCSH-DDL-000034	5177	DL-1A	52	56	√	√		√	√	√	√	√	√
LPRP-SCSH-DDL-000035	5177	DL-1A	56	60	√	√		√	√	√	√	√	√
LPRP-SCSH-DDL-000036	5177	DL-1A	60	64	√	√		√	√	√	√	√	√
LPRP-SCSH-DDL-000037	5177	DL-1A	64	68	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000038 (duplicate)	5177	DL-1A	64	68	√				√	√	√		
LPRP-SCSH-DDL-000039	5177	DL-1A	68	72	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000040	5177	DL-1A	72	76		√		√	√				√
LPRP-SCSH-DDL-000041	5177	DL-1A	76	80	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000042	5177	DL-1A	80	84		√		√	√				√
LPRP-SCSH-DDL-000043	5177	DL-1A	84	88	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000044	5177	DL-1A	88	92		√		√					√
LPRP-SCSH-DDL-000045	5177	DL-1A	92	96	√	√		√		√	√		√
LPRP-SCSH-DDL-000046	5177	DL-1A	96	100		√		√	√				√
LPRP-SCSH-DDL-000001	5172	DL-1B	0	20		√							
LPRP-SCSH-DDL-000002	5172	DL-1B	20	47		√							
LPRP-SCSH-DDL-000003	5172	DL-1B	47	70		√							
LPRP-SCSH-DDL-000068	5178	DL-2A	0	2	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000069	5178	DL-2A	2	4	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000070	5178	DL-2A	4	6	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000071	5178	DL-2A	6	8	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000072	5178	DL-2A	8	12		√		√					√
LPRP-SCSH-DDL-000073	5178	DL-2A	12	16	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000074	5178	DL-2A	16	20		√		√					√
LPRP-SCSH-DDL-000075	5178	DL-2A	20	24		√	√	√				√	√
LPRP-SCSH-DDL-000076	5178	DL-2A	24	28		√		√				√	√
LPRP-SCSH-DDL-000077	5178	DL-2A	28	32		√	√	√				√	√
LPRP-SCSH-DDL-000078	5178	DL-2A	32	36		√		√				√	√
LPRP-SCSH-DDL-000079	5178	DL-2A	36	40		√	√	√	√			√	√
LPRP-SCSH-DDL-000080	5178	DL-2A	40	44		√		√				√	√
LPRP-SCSH-DDL-000081	5178	DL-2A	44	48		√	√	√					√
LPRP-SCSH-DDL-000082	5178	DL-2A	48	52		√		√					√
LPRP-SCSH-DDL-000083	5178	DL-2A	52	56		√		√					√
LPRP-SCSH-DDL-000085	5178	DL-2A	56	60		√		√					√
LPRP-SCSH-DDL-000086	5178	DL-2A	60	64		√		√					√
LPRP-SCSH-DDL-000087	5178	DL-2A	64	68		√		√					√
LPRP-SCSH-DDL-000088	5178	DL-2A	68	72		√		√	√				√

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Table 4: Summary of Available Data for the Dundee Lake Coring Program

Sample_ID	Core_ID	Common Name	Depth_Top	Depth_Bottom	PCDD/F	GS	RAD	METAL	PAH	PCB	PEST	TPH	TOC
LPRP-SCSH-DDL-000089	5178	DL-2A	72	76		√		√					√
LPRP-SCSH-DDL-000090	5178	DL-2A	76	80		√		√	√				√
LPRP-SCSH-DDL-000091	5178	DL-2A	80	84		√		√					√
LPRP-SCSH-DDL-000093	5178	DL-2A	84	88		√		√	√		Not available		√
LPRP-SCSH-DDL-000004	5173	DL-2B	0	45		√							
LPRP-SCSH-DDL-000005 (duplicate)	5173	DL-2B	0	45		√							
LPRP-SCSH-DDL-000006	5173	DL-2B	45	75		√							
LPRP-SCSH-DDL-000007	5173	DL-2B	75	98		√							
LPRP-SCSH-DDL-000047	5179	DL-3A	0	2	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000048	5179	DL-3A	2	4	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000049	5179	DL-3A	4	6	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000050	5179	DL-3A	6	8	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000051	5179	DL-3A	8	12		√		√	√				√
LPRP-SCSH-DDL-000052	5179	DL-3A	12	16	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000053	5179	DL-3A	16	20		√		√					√
LPRP-SCSH-DDL-000054	5179	DL-3A	20	24		√	√	√	√				√
LPRP-SCSH-DDL-000055	5179	DL-3A	24	28		√		√				√	√
LPRP-SCSH-DDL-000056	5179	DL-3A	28	32		√	√	√				√	√
LPRP-SCSH-DDL-000057	5179	DL-3A	32	36		√		√				√	√
LPRP-SCSH-DDL-000058	5179	DL-3A	36	40		√	√	√	√			√	√
LPRP-SCSH-DDL-000059	5179	DL-3A	40	44		√		√				√	√
LPRP-SCSH-DDL-000060	5179	DL-3A	44	48		√	√	√				√	√
LPRP-SCSH-DDL-000061	5179	DL-3A	48	52		√		√				√	√
LPRP-SCSH-DDL-000062	5179	DL-3A	52	56		√		√				√	√
LPRP-SCSH-DDL-000063	5179	DL-3A	56	60		√		√					√
LPRP-SCSH-DDL-000065	5179	DL-3A	60	64		√		√					√
LPRP-SCSH-DDL-000066	5179	DL-3A	64	68		√		√	√				√
LPRP-SCSH-DDL-000067	5179	DL-3A	68	72	√	√		√		√	√		√
LPRP-SCSH-DDL-000008	5174	DL-3B	13	41		√							
LPRP-SCSH-DDL-000009 (duplicate)	5174	DL-3B	13	41		√							
LPRP-SCSH-DDL-000010	5174	DL-3B	41	48		√							
LPRP-SCSH-DDL-000011	5174	DL-3B	48	59		√							
LPRP-SCSH-DDL-000094	5180	DL-4A	0	2	√	√	√	√	√	√	√		√
LPRP-SCSH-DDL-000095	5180	DL-4A	2	4	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000096	5180	DL-4A	4	6	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000097	5180	DL-4A	6	8	√	√		√	√	√	√		√
LPRP-SCSH-DDL-000098	5180	DL-4A	8	12		√		√					√
LPRP-SCSH-DDL-000099	5180	DL-4A	12	16		√	√	√	√				√
LPRP-SCSH-DDL-000100	5180	DL-4A	16	20		√		√					√
LPRP-SCSH-DDL-000101	5180	DL-4A	20	24		√	√	√				√	√
LPRP-SCSH-DDL-000102	5180	DL-4A	24	28		√		√				√	√
LPRP-SCSH-DDL-000103	5180	DL-4A	28	32		√	√	√				√	√
LPRP-SCSH-DDL-000104	5180	DL-4A	32	36		√		√				√	√
LPRP-SCSH-DDL-000105	5180	DL-4A	36	40		√	√	√				√	√
LPRP-SCSH-DDL-000106	5180	DL-4A	40	44		√		√					√
LPRP-SCSH-DDL-000108	5180	DL-4A	44	48		√	√	√					√
LPRP-SCSH-DDL-000110	5180	DL-4A	52	60		√		√					√
LPRP-SCSH-DDL-000112	5180	DL-4A	60	68		√		√					√
LPRP-SCSH-DDL-000115	5180	DL-4A	68	76		√		√					√
LPRP-SCSH-DDL-000117	5180	DL-4A	76	84	√	√		√		√	√		√
LPRP-SCSH-DDL-000119	5180	DL-4A	84	92	√	√		√		√	√		√

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